PROPERTY OF
THE NATIONAL ASSOCIATION OF COST ACCOUNTANTS
NEW YORK CITY
OUT OF PRINT

N. A. C. A. BULLETIN

Vol. XX, No. 10 January 15, 1939

IN TWO SECTIONS

Section 1

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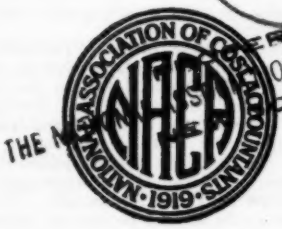

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This Bulletin is published semi-monthly by the National Association of Cost Accountants, 385 Madison Avenue, New York. Subscription price, $10.00 per year. Entered at the Post Office, New York, N. Y., as second-class matter August 28, 1925, under the Act of March 3, 1879.

EDITORIAL DEPARTMENT NOTE

While cost accountants do not have the same direct interest in the rulings, procedures and attitudes of the Securities and Exchange Commission as have financial accountants, they are, nevertheless, greatly interested in some phases of accounting practices which have been passed on by the Commission. This is especially true of the fields of depreciation and inventory valuation. Accordingly, we feel our readers will be interested in a description of the approach taken and procedure followed by the Commission and its staff in the handling of accounting problems presented to them in various ways. We are fortunate to be able to present such a description by the Chief Accountant of the Commission.

William W. Werntz, author of our first article, is both an accountant and lawyer. Following his graduation from Yale University in 1929, he served his Alma Mater for the next six years as instructor of accounting and corporation law. During this period he continued his studies, receiving the LL.B. Degree from the Yale Law School in 1931 and thereafter continuing the study of economics in the Graduate School. In 1935, Mr. Werntz joined the Securities and Exchange Commission as Principal Attorney and last year was promoted to the position of Chief Accountant. The present article was presented by him as an address before the Indianapolis Chapter of N. A. C. A. in December.

Our second article was contributed by one of our foreign members. In August, 1935, a young man appeared at National Headquarters with a letter of introduction from the United States Minister to Sweden. As a result of his work at the University of Stockholm, Olov Rynell had been granted a year's scholarship for study abroad, had spent the first six months in England and had arrived in the United States to complete his year's study in this country. This period was divided between studying at Columbia University, reading in the N. A. C. A. library and visiting other parts of the country in a trip that extended to the West Coast and back, which we arranged for him. During his stay here Mr. Rynell made many friends among N. A. C. A. members who will be glad to know that since his return to Sweden he has been employed as Cost Accountant with the pulp and paper firm of Billeruds Aksiebolag of Säffle, Sweden. After Mr. Rynell's return to Sweden, another Swedish member, Oskar Karlsson, wrote us that a Committee in that country was engaged in the development of a set of uniform accounting principles. Mr. Rynell kindly agreed to outline recommendations of the Committee for us and the present article is the result. The report of the Swedish Cost Committee is entitled "Enhetliga Principer för Självkostnadsberäkningar."

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NATIONAL ASSOCIATION OF
COST ACCOUNTANTS

JANUARY 15, 1939

AN APPROACH TO ACCOUNTING PROBLEMS

By William W. Werntz, Chief Accountant,
Securities and Exchange Commission, Washington, D. C.

IN THE last few decades accounting has passed from an era of high stools in the anteroom to an era of important seats at the conference table. Its present important position has not been won by accepting subserviently the opinions of others, but rather by offering independent, intelligent and practical solutions to vexing problems confronting managers, creditors and owners. This growth has not been accomplished by any one method. Some of it has resulted from the pressing need of the moment; some of it from the reflections of students on particular problems or general principles; some of it from the shrewd conclusions of hindsight; and some by compulsion from statutes, courts and regulatory commissions.

Out of the financial excesses of the 20's came the most recent of such statutes, the regulatory authority of the Securities Act of 1933 and the Securities Exchange Act of 1934. Perhaps their major innovation, so far as accountants are concerned, is the grant of broad powers over the form and content of financial statements required to be filed. In fact, the provisions go even further and permit among other things the adoption of rules as to the principles of valuing assets, providing for depreciation and determining income. To accounting, in general, the exercise of these powers offers another means, more ready and compelling than convention, to make secure the progress that has been won by bitter struggle and in new fields to enable more rapid advances.

S.E.C. Accounting Problems Arise in Three Ways

But the integration of these new sanctions with existing doctrines in accounting and finance is not to be accomplished at a single stroke or in a single year. Four years ago many accountants "viewed with alarm" the introduction of the controls established over financial information in prospectuses and listing statements. I believe many felt that progress would be hampered, others that individual cases would be straight-jacketed without opportunity for discussion, others that rules would be adopted with-

out careful weighing of divergent views and practical needs. That this has not been the case is clear from the machinery which the Commission has set up to handle the accounting problems presented. It is my intention to outline briefly the principal avenues by which accounting problems come to us, and to illustrate by means of some examples how these problems are handled.

Generally speaking, these problems arise in one of three ways: first, in the course of preparing accounting regulations and, under the Holding Company Act, prescribing uniform systems of accounts; second, in connection with the financial statements which a particular company may be required to file; and third, in the preparation of accounting opinions for the use of the staff or for publication. In addition, of course, special problems arise with more or less regularity in other ways.

Problems Arising in Preparing Accounting Regulations

I think the steps preceding the adoption of an important form or regulation will best serve to explain the handling of problems falling in the first group. At the present time an additional form is not ordinarily novel but rather represents an improvement on existing forms in the light of our experience with them. Many of you are doubtless aware that it is proposed to codify the requirements as to the form and content of financial statements in a single document rather than to continue the present method of having a set of instructions in each of the major forms under the 1933 and 1934 Acts. The Forms and Regulations Division set out to accomplish this objective. It first collated all of the existing requirements and prepared from them a single draft which integrated in a single set of instructions not only the original provisions of Form 10 and Form A-2 but also the improvements that had been effected in later forms. After obtaining a working draft, the experience of the Commission with all of its existing forms was reviewed. Representative filed statements, deficiency memoranda, interpretive opinions and office memoranda were carefully culled with a view to determining what existing language was ambiguous, what provisions had worked badly in practice, what problems had arisen that were not covered, what new principles had been developed, and what inconsistencies there were in the various requirements. A revision of the working draft gave effect

to the information obtained. The revised draft was scrutinized by the other divisions of the Commission for comments and suggestions on the problems of particular interest to them. Finally, the proposed regulation was presented to the Commission point by point and tentative decisions were reached on the major controversial problems.

Obtaining Criticism of Accountants, Lawyers and Others

The next step, of course, was to obtain adequate criticism of the materials by those who would in the future have to work with them. To do this, co-operation was sought of a great number of accountants, lawyers, companies and professional groups. In addition to a large volume of correspondence, conferences were held both in Washington and elsewhere at which members of the staff discussed the new features of the regulation, answered questions concerning it and received personally the criticism and recommendations of those present. All suggestions received at the conferences or in correspondence were collected and analyzed and, in the light of these and further thought and study on the part of the staff, a new draft of the materials has been made. When completed this will again be presented to the Commission for its consideration with a view to adoption in the form of a general accounting regulation.

When the interests of a particular class of companies are primarily affected, special effort is made to obtain the views of specialists in that field. Thus in preparing the Uniform system of Accounts for Public Utility Holding Companies, numerous conferences were held with representatives of public utility companies and associations as well as with representatives of state utility commissions and public accountants. Similar special efforts were made in the case of forms provided for promotional mining companies, for investment companies and for insurance companies.

By thus drawing freely upon the time and thought of those who will be concerned with filings under the new accounting regulation and of others who have given thought to the development of accounting, it is our belief that a far more satisfactory and effective document can be obtained which at the same time will be entirely workable from the point of view of registrants.

Problems Arising from Statements Filed with S.E.C.

In the second group I have mentioned, composed of statements filed under the Securities Act of 1933, the Securities Exchange Act of 1934 and the Holding Company Act, lies the largest volume of accounting problems and the most intimate contacts with companies and accountants. Under the 1934 and 1935 Acts, moreover, the annual reports result in a continuing relationship from year to year.

In this group it seems probable that the more important and controversial problems which may arise with respect to a particular set of financial statements will be known to the company or its accountants before the statements are actually filed. Under such circumstances, correspondence or in some cases informal discussions in advance of filing have proved that a solution can generally be found which will be acceptable to the Commission, the company and its accountants. The advantages of such correspondence and round-table conferences are apparent, not the least of them being the mutual understanding of the views and the problems of the registrant and the Commission.

Procedure in Examining Statements

Once a filing has been made, an examination of the financial statements follows as a matter of course. Under the 1933 Act, each registration statement is assigned to a group consisting of an accountant, a lawyer, an analyst and appropriate assistants. A memorandum of deficiencies is prepared from reports of the several experts. As to accounting matters, the deficiency memorandum is then reviewed by a supervising accountant. Under the 1934 Act a comparable procedure is followed as to applications for registration and annual reports. Before forwarding the deficiency memorandum, however, novel and important questions of accounting policy and principle are taken up with the Chief Accountant, and in exceptional cases with the Commission.

If the registrant involved should take exception to any of the deficiencies cited and the matter is not satisfactorily settled by correspondence, a conference may be arranged between the registrant and members of the examining staff for the purpose of clarifying the issues involved and obtaining further information as to the facts and circumstances of the particular problem. If no

solution can be reached as to the accounting difficulties and the matter is of sufficient importance, further discussion or correspondence with the Chief Accountant may be requested by the registrant, and again, if necessary, the staff may present the issues to the Commission for its consideration. Ordinarily, however, agreement is reached as to an appropriate method of correcting by change or disclosure the points which have been questioned. Here again the mutual exchange of views and detailed discussion of the issues irons out what often appear at first glance to be major disputes.

If the subject of the controversy is of limited application, a decision made in the case may go no further. If, however, the matter is one of broader application, it may be made the subject of a memorandum for the guidance of all members of the Commission's staff. If the issue involves a general principle of accounting, it may lead to a public release for the guidance of all registrants.

Preparation of Accounting Releases

It is in the preparation of such releases that problems falling in the third group arise. The subject matter of these releases may have developed in the manner described from the problems of a particular registrant or may have been suggested in the course of a general survey of statements on file. In either case, the whole area in which the problem falls is first thoroughly canvassed by members of the staff. All available written material is consulted and registrations involving the question are reviewed. In some instances special opinions are obtained from accountants and others in much the same manner as in connection with the drafting of important forms. I think I may safely say, however, that not yet have we sought an opinion and received a unanimous answer. With these opinions in hand and digested, a general conclusion is reached and an appropriate release drafted. In not a few cases, the conclusion is that no release should be drawn. Prior to final approval and publication of a release, the views of co-operating committees of various accounting associations are also obtained.

In an effort to give some publicity to the type of accounting problems being decided in individual cases, the Commission,

a little over a year ago, agreed to supply the editors of *The Accounting Review* with the facts involved in interesting cases. A total of twenty of these have been published with comments by the editors in the September and December issues of 1937 and the March and June issues of 1938. To continue general publicity for this phase of our work we now plan the publication of such material in a series of releases paralleling our opinions on accounting principles. While some of these releases will indicate merely the manner of treating a particular or peculiar set of facts, others may be looked upon as the first step in the development of an opinion covering a general principle of accounting.

Accounting Series Release No. 1

Such is the machinery. I believe you will be interested in observing how it worked in practice in the case of what is known now as Accounting Series Release No. 1. The problem appeared in an application for registration under the Securities Exchange Act. The examiner's report contained a paragraph noting that although earned surplus was present, a write-down of fixed assets against capital surplus had been made at the beginning of the three-year period covered by the financial statements. This had the effect of substantially reducing depreciation charges during subsequent years, and in consequence overstating income and earned surplus. Although the examiner considered this a violation of accounting principles, the facts were disclosed in footnotes to the balance sheet and profit and loss statements, and on this basis no action was recommended at the time. Nor did the examiner comment at the time on the auditor's certificate which stated that the accounts, with notations, were fairly presented in accordance with accepted principles of accounting consistently maintained by the company during the period under review. In connection with this certificate it should be noted that an earlier write-down of property had been charged to earned surplus.

Later, however, the examiner prepared a memorandum discussing the propriety of the registrant's action in writing off the property to capital surplus and asking what, if any, action could be taken. Extensive pencil notes by a reviewing accountant indicate that he was disposed to challenge the propriety of the charge to capital surplus and insist upon an explanation.

The next step was the issuance of a formal memorandum of deficiencies in which the accountants for the registrant were asked to prepare a letter to the Commission justifying the charge to capital surplus before first exhausting earned surplus. The reply to this came from the secretary of the registrant who explained that the write-down was of obsolete plants and excess capacity, all supported by proper action of stockholders and directors.

Although the examiner seemed satisfied with this explanation, the facts were presented to the Chief Accountant for his opinion on the principles involved. After reviewing the entire situation, the Chief Accountant drafted a letter to the registrant stating his opinion in the case in such a manner as to be satisfactory for publication. Prior to publication, however, the views of the co-operating committee of the American Institute of Accountants and of the Executive Assistant to the Committee on Stock List of the New York Stock Exchange were obtained as to the proposed opinion. Shortly afterwards the opinion was approved for publication by the Commission and became what we now term Accounting Series Release No. 1. That release concluded that reductions in the carrying value of fixed assets made to give recognition to previous under-depreciation, unrecognized obsolescence, and similar conditions must be charged against earned surplus.

Accounting Release No. 8

This case is only one of a large number involving the practice of restating asset values. Accounting Release No. 8 recites the facts of a case involving a promotional enterprise in which the Commission took exception to the company's intention to use appraised values far above cost in a pro forma balance sheet to be used in a prospectus. The release concludes with the Commission's decision to require the registrant to amend its balance sheet so as to eliminate the appraisal surplus and show the fixed assets at cost. It is of particular importance in this instance to note that the company was in the promotional stage and had no record of earnings. The appraisers defined "sound value" to mean "the value for use by a going concern having prospects for the profitable use, at normal plant capacity, of the properties appraised."

Yet the prospectus announced an intention to operate at one-third of plant capacity until sales volume developed.

The Problem of Depreciation on Appraised Value

A related problem of importance in determining income on the one hand and production costs on the other is the amount that should be taken as depreciation when assets are carried at restated values. If written down, I have found few who object to computing depreciation on the basis of the restated amounts. The same unanimity of opinion is not evoked when carrying amounts are restated upward. Under both the 1933 and 1934 Acts the Commission has, of course, the power to determine the method of valuing assets to be followed in statements filed with us. The Securities Act goes somewhat further and in paragraph (25) of Schedule A there is an indication that cost should be used. However, in the case of enterprises having some financial history the entry of sound appraisal values has not ordinarily been questioned, although not infrequently the method of arriving at appraisal values has been made the subject of attack. Even though the entry of appraisals is not attacked, there remains the question, if new and higher amounts are shown for fixed assets, of whether the provision for depreciation should not be based on the new carrying value and, if so taken on that basis, whether any part of the charge may be omitted from the income statement and charged directly to earned surplus, or paid-in surplus, or revaluation surplus.

The importance of this and related accounting problems has prompted an extensive study of the present practice and principles followed in reflecting changes in the carrying values of property. We have sought to find answers for such questions as these: Should the higher amounts be entered in the books or displayed only as a collateral notation? Is accounting at cost inconsistent with determination of sales prices on the basis of present replacement cost? Does the carrying of assets at amounts higher than cost infer the intention to estimate profitableness of operation on the basis of such higher amounts, or at least to earmark permanently any revaluation surplus involved? Or is a requirement of disclosure sufficient?

Some argue the well-established theory that depreciation merely measures the expiration of cost outlays for assets consumed in production. Others that accounting should produce information of value in fixing prices and in planning the financing of replacements. Still others point to a need for consistency whether assets be restated upwards or downwards. Still others point to possible inferences by creditors and stockholders when upward restatements are made.

A review of the available cases and authorities has disclosed a well-defined trend among certifying accountants in favor of charging operations with depreciation on the full carrying value of assets in those cases in which new and hgher values have been recorded on the books. A number of cases have come to our attention in which the registrant has charged operations with depreciation on cost and the accountants in a footnote have expressed a preference for the higher base. This thought was also expressed, I believe, by several of the speakers at the annual meeting of the American Institute of Accountants last September.

A Specific Case

So far the method of disclosure has been followed by the Commission. For example, the problem under discussion came up in the registration statement of a well-known corporation which had appraised its properties and then capitalized appraisal surplus by declaring a stock dividend. The company thereafter charged the depreciation to paid-in surplus. A deficiency followed on the grounds that, under the circumstances, the depreciation on the full appraised value should have been charged to operations. The criticism was met by an amendment to the accountant's certificate so as to include the following language: "The companies charged paid-in surplus with depreciation applicable to that portion of the book value of property which represented appreciation . . . In our opinion such charges would more properly have been made against current income."

The conclusions of the study have not been drawn. In the meantime individual cases are largely disposed of at the conference table. But the seeds of future rules are sown. As the issues become clarified and the results of various methods are revealed in subsequent annual reports, other releases may be expected to

appear, dealing with particular parts of the problem or clarifying certain of the principles.

Is Depletion a Necessary Deduction?

A somewhat closely related problem is presented by the question of whether depletion is a necessary deduction in arriving at the income of companies exploiting natural resources. It is clear from statements filed with us that practice is not uniform. The oil industry, coal and iron mining companies, and quarrying companies have very generally made such a deduction. In the case of precious metal and certain other non-ferrous mining companies, practice is far from uniform. Some deduct depletion and include it in valuing inventories. Others charge depletion to surplus and do not include it in valuing inventories. Still others merely state that depletion is not taken.

Our examination of this problem has indicated that accounting texts and most practicing accountants treat depletion of wasting assets as a necessary deduction before arriving at the annual profits. Certainly, the costs of acquiring and developing mineral lands or rights must be recovered, that is, allowed for, in any final attempt to determine whether the extraction and processing of the mineral body proved profitable to the operators. A few practicing accountants specializing in this field deny this position. Others seem to recognize the theory but claim there are cogent reasons for ignoring it; for example, in many cases there is no practicable way of determining the dollar amount to be taken.

It has seemed to us that, in principle, deduction of depletion in the income account is necessary. Accordingly, in case of deviation from this procedure there has been required in the accountant's certificate a clear statement of the method followed and its consequences in the balance sheet and income statement. This, however, introduces the further problem of whether such a statement in the certificate constitutes a qualification of the accounts or is a mere statement of fact. At the present time such cases as arise are being handled as individual problems by means of discussion and round-table conferences with those interested. In the meantime, the whole group of cases is the subject of another extensive study in the hope of ultimately clarifying the situation

by means of accounting releases or appropriate amendment of the rules and regulations.

The Basis of Inventory Valuation

As cost accountants you may have particularly direct interests in another problem of importance in financial reporting. I refer to the problem of valuing inventories. In this field, the Commission has adopted no rules other than to require disclosure of the principles of valuation followed. In consequence, nearly all generally recognized methods of inventory valuation have, I believe, been followed in one or another of the statements filed. Only seldom has there been objection by the Commission to the use of a particular method. Despite this latitude of choice, the disclosure requirements have raised some difficulties. Is an explanation such as "cost or market" adequate? It is commonplace that cost on a first-in, first-out basis may be vastly different from an average, last-in, first-out, or standard cost. Like variation is possible in the methods of determining market. The question is made more complex by the use of different methods for different classes of goods held in inventory by a particular company. When a requirement was proposed calling for a clear indication of what was meant by cost or market, numerous commentators made the point that if the operations of a company were at all complex, several pages of explanation would be required by reason of the use of diverse methods. Others indicated that not much less than a text on cost accounting would suffice to illumine standard costs. Yet the problem remains. When inventories bulk large, are financial statements adequately informative if only the passing comment, "cost or market, whichever is lower," is given as an explanation of the basis of inventory values, and consequently of profit determination?

In considering the merits of particular methods of inventory valuation, the inquiry in one direction is naturally as to the effect on the profit and loss statement. If a business is truly cyclical both, let us say, as to volume of sales and as to profitableness, it seems improper to pursue an inventory policy which nevertheless results in a constant or relatively constant showing of profits, irrespective of variations in sales volume. But criteria have not yet been established for conclusively distinguishing an

inventory policy which merely reflects the fact of stability from one which gives only an appearance of stability and in reality conceals the ebb and flow which is the distinguishing investment characteristic of some kinds of business.

A Case in Point

An interesting case involving judgment on this point was recently presented to the Commission. It has not yet been resolved, but I believe the facts are worth stating. From the information in the application and annual reports the facts appear to be these. The registrant in question is engaged in a reclaiming operation. Salability of the products depends on a market which is highly erratic both as to price and quantity demanded. Occasionally, one of the products has to be made synthetically in order to satisfy peak demands and retain the market. On the other hand, the company is under contract to take all of the waste products of certain companies and production therefore cannot be regulated to keep step wtih the demand. The company has followed the policy of making commitments on a sliding scale basis so that the prices eventually paid for the waste product are adjusted to the current market price of the reclaimed products. The company's accounting for finished products seems at first glance to be a variation of the base stock method often used for certain basic raw materials. The striking feature is a candid admission that it is designed to smooth out the ups and downs of each period's operating income that would otherwise appear. But the desired goal is reached by an unusual procedure.

Extremely low base prices are established for the entire finished products inventory. In years when sales exceed production and inventories accordingly decrease, the excess of selling price over the base price of goods taken from inventory is credited to a "Price Equalization Reserve" account and a corresponding charge made to cost of sales. In years when the inventory increases, the added quantities are carried to inventory at the base price, and if actual cost exceeds the base price, the excess is absorbed in cost of sales. This charge is, however, offset by transfers from the price equalization reserve, presumably using all of the reserve or only so much as is necessary to offset the charge to cost of sales. Thus when sales exceed production the reduction in inventory is

charged against sales at selling prices, but the excess over the base price is credited to the reserve. When production exceeds sales, it is apparently intended that the increase in inventory is to be deducted from cost of sales at the base price and there is also to be deducted from cost of sales and from the reserve an amount equal to the excess of the current selling price over the base inventory price. As a result, if production were constant and there were no other variants, the business would show exactly the same dollar profit regardless of the volume of sales—as long as the reserve lasted. Yet sale is not assured.

Is this merely a somewhat unusual method of solving the valuation of joint products? It is a method of allocating profits to the period in which production occurs? Does the fact that sale is not made and is not assured make its use improper? The new policy was installed at the close of a particular year. The necessary reduction of inventory to the base prices selected was charged against the operations of that fiscal year. In the first full year of operation, inventories decreased and a reserve resulted. What should be done if in the next year an increase in inventories wipes out the reserve and if in the following period there are still further increases in inventories? Does the possibility of such a situation invalidate the method or merely serve to limit its usefulness? Finally, is such a method a part of the body of "accounting principles for which there is substantial authoritative support"?

Differences Cleared in Conference or by Correspondence

A good deal of the result of the approach we use to accounting problems is not apparent in the statements filed, for in many cases the result of correspondence and conference is that no change in the filed statements is made. An excellent example of how cooperation at the right time can be mutually advantageous to the registrant and the Commission arose at one time in an entire industry, in connection with the method of displaying inventories. The instruction book for one of the forms for annual reports requires that major classes of inventory such as raw materials, work in process, finished goods and supplies be stated separately and that the basis of determining the amounts be

shown. It also permits the use of any other classification that is reasonably informative.

Annual reports for companies in this industry came in with balance sheets as at December 31, 1937, showing inventories in a single aggregate. In some cases, footnotes briefly explained that under the system of accounting employed by the company it was impossible to break down the amount as requested. The notes also explained that physical inventories had been taken in August or September. Since previous years' reports for the several companies had shown the required classification, the companies were requested to explain the apparent inconsistency between the practice of the current and prior years. This correspondence developed the information that the industry had adopted a uniform method of accounting which classified expenditures on production between direct materials, direct labor and overhead but that no work-in-process or finished goods accounts were used. When sales were made, the primary accounts were credited for the proper proportion of cost and cost of sales was debited. The balances in the direct cost and overhead accounts constituted the closing inventory for balance sheet purposes. Since nearly all production in this industry is under contract and a system of specific raw materials purchases is used, all costs incurred on undelivered goods could be considered contracts in process. It was claimed by the companies that any attempt to report inventories classified in the conventional manner would entail an excessive cost if determined by physical count, and in any case the result would be uninformative if not misleading.

The explanation of the circumstances was felt to justify the position taken by the several companies as to figures supplied at December 31, and the deficiency noted against the companies on this point was abandoned. This situation, however, suggests a way in which registrants may avoid certain deficiencies in such cases. If a marked departure from the form and content of statements previously filed is contemplated, a discussion with us of the problems present and the changes proposed to handle them should make possible a solution which would avoid the citation of deficiencies. In a case such as this the discussion might well be handled by representatives of the industry rather than an individual registrant. In other cases it would seem sufficient for the

registrant merely to outline fully the circumstances underlying the changes either in the statements themselves or in supplemental letters.

The Natural Business Year

This case also invites consideration of another point in which most accountants are deeply interested. I refer to the use of the natural business year as the accounting period. The accountants involved in the case indicated that the inventories were verified by count during the summer months, August 31 being the most usual date, since at that time quantities were at a minimum. While a change to that date seems indicated, the choice of fiscal periods is not ours. But it may be noted in passing that a profit and loss statement covering a single cycle of operations rather than parts of two is ordinarily more informative. In addition, variations due to changing inventory values would be minimized and in the instant case another qualification by the accountant omitted.

Such is the operation of the machinery we have set up to handle accounting questions. What Chairman William O. Douglas recently said in another connection is equally applicable here:

> The virtue of the administrative process is its ability to deal with technical, debatable, undefinable or imponderable matters in a discretionary manner. It provides a realistic and sound alternative to hard and inflexible rules which proceed on the false assumption that right or wrong, black or white, constitute the only choice. But beyond that it permits of action not only case by case but by rules. A rule can be expanded, contracted or repealed in light of changed conditions or new experience.

En route, the round-table conference is a requisite step. I hope that no accountant or company will hesitate to employ it.

UNIFORM COST ACCOUNTING PRINCIPLES IN SWEDEN

By Olov Rynell, Cost Accountant,
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IN RECENT years considerable attention has been paid in Sweden to the importance of sound cost accounting for manufacturing companies. The work towards this end was started some years ago with the view of making cost accounting terminology more uniform than it used to be, as this was considered to be a prerequisite for uniform systems. In 1931, a division of the Standardization Committee of Sweden prepared a manual containing definitions and explanations of various expressions and terms relative to cost accounting. At that time it was pointed out that the work done was only a beginning towards a better concept of the value of correct cost accounting.

In order to arrive at some general cost accounting principles, co-operation was established between the Standardization Committee of Sweden and a section of the Association of Swedish Engineers, and in 1933 a special committee was formed to handle the matter. Many representatives of big manufacturing companies were members of this committee. A preliminary manual was prepared in 1934 and distributed to a number of industries within the country, with requests for their comments. Later, the manual was revised and to some extent rewritten, and was finally published in the spring of 1937.

The manual contains a definition of cost, discusses the interpretation of interest on investments and depreciation, and covers the treatment of all the various cost items. Moreover, different cost accounting methods are mentioned and explained, the manual being amplified by several examples.

The Meaning of Cost

Cost is defined to include all charges to a product until it is delivered and paid for. Consequently not only manufacturing costs but also selling and administrative expenses must be included.

The following classification of cost items is considered to be appropriate:

A. Manufacturing cost
   1. Direct material
   2. Material burden
   3. Direct labor
   4. Manufacturing expenses
   5. Certain direct charges

B. Selling expenses

C. Administrative expenses

Interest on Investments

The Committee contends that interest on all investments which are made for the purpose of the manufacturing processes of a company is a cost. The inclusion of interest in cost is deemed to be necessary for a correct comparison between different production lines and different production methods. It is particularly stressed that the influence of the length of the time of production will be neglected if interest is not treated as a cost item. Further, the cost of holding stocks of raw material and finished products is not disclosed if interest is not included. For the purpose of comparisons between industries with plants owned and industries with plants rented, it is also important to consider interest as an element of cost. The rate of interest used is recommended to be the one at which the company can borrow money in the open market.

A thorough treatment is given to the question of the amount on which the interest should be computed. As regards fixed assets various possibilities are stated and discussed. The purchase value or the book value may be used as a basis for interest computation, but on account of fluctuations in the price level and the consequences of this, neither of these methods is recommended. The Committee favors the use of a replacement value, adjusted with regard to age and general condition of the asset in question. This value is called "use value." If, for instance, a machine has been purchased at $10,000 and is calculated to last ten years, its book value after two years will be $8,000. Suppose that the replacement price is $20,000; then the use value will be this amount less depreciation for two years, that is, $16,000.

When this method is used, a great advantage is considered to be gained for the comparison of manufacturing costs of plants

built at different price levels. The Committee holds that two plants which are equal in efficiency and organization ought to show the same amount of manufacturing cost, irrespective of the time of erection, and this is only achieved if interest is computed on the basis of "use value."

As to current assets, it is suggested that the average amount of these in a year should constitute the basis for interest computation. However, accounts receivable ought to be deducted, and due regard must be taken of interest income from bank accounts and similar assets.

Consideration is given to the elimination from inventories of the interest element.

Depreciation

In dealing with depreciation the Committee states first the various purposes of annual write-offs on fixed assets. Apart from the importance of insuring a time distribution in the financial accounts of the purchase value of fixed assets, regular depreciation must also provide means for the replacement of buildings, machinery, etc. This has to be borne in mind when the value is determined on which depreciation should be figured.

Different methods are mentioned. The most common one is depreciation on the original purchase or cost value, which is generally calculated at a percentage which does not vary from year to year. However, the percentage may be increased or decreased annually, according to the plan. The same result as in the latter case will be obtained by basing depreciation on the book value of the asset and using a fixed percentage.

Another method is to use the replacement value as a basis for depreciation. This can be either the actual replacement price at any specific date or a forecasted price at the time of the calculated replacement of the asset in question. However, that price is generally too uncertain to be used for cost computations, and the principle of using it may be entirely neglected.

The Committee recommends that depreciation for cost purposes be based on the replacement value in the first-mentioned meaning. Thereby changes in the price level for different fixed assets will be taken into consideration when the cost of a product is computed, and comparisons between different plants will be on

the same base. The percentage ought to be fixed and calculated with due consideration to the estimated economic lifetime of the asset.

A consequence of the principle recommended is that depreciation in the cost accounts will differ from that in the financial accounts. To show the distinction, separate accounts ought to be set up which are also supposed to take up the difference between interest charged and interest credited. They are appropriately called "Plant Result Account" and "Machinery Result Account."

To the debit of "Machinery Result Account" are to be brought regular depreciations on machinery at the original cost value and interest on the book value of machinery. The account is to be credited for depreciations based on replacements values, as explained, and interest computed on "use values." As the credits to both "Plant Result Account" and "Machinery Result Account" are charged to the various manufacturing departments, these will have to pay for the use of the facilities in the form of a rent, comprising depreciation and interest.

Naturally, the two accounts will generally not balance. The Committee states various reasons for a difference between debit and credit, and offers some recommendations as to the way of treating the differences. The accounts are charged for depreciation and interest only on those assets which are not yet entirely written-off, but are credited for depreciation and interest on all assets still in use. Consequently a profit or a loss will arise whenever the actual lifetime of an asset exceeds the estimated one or comes below it.

In times of rising prices a profit will appear in the accounts, as the replacement values are higher than the original cost or purchase prices. However, this profit should not be treated as an ordinary operating profit, as it is a result of general price fluctuations. It is recommended that this "profit" be treated as a reserve, with the purpose of facilitating the company's future reinvestments, which are likely to become more expensive than the original assets.

When the price level is lowering a loss will be shown in the accounts, and if previous credit balances are not sufficient to offset it, the profit and loss account must finally bear it.

Direct Material

Direct material is all material that can be charged directly to a certain product, and includes raw material as well as products bought from outside sources.

The pricing of the material can be computed at purchase price, market price or standard price. The three different methods are explained and the advantages and disadvantages of each of them discussed in the Manual, which concludes with a recommendation for standard rates set to correspond as closely as possible to market prices. Thus the principle of charging cost items to the manufacturing departments at replacement values is observed even here.

As regards the accounting for direct material, the Committee favors a certain set-up. Incoming material is entered at purchase price in the "Material Account," which is credited, and the "Price Fluctuations Account," debited for material issued, also at purchase value. However, material issued is also credited in the "Price Fluctuations Account," but at a standard rate, and this amount is charged to the "Work in Process Account." Consequently the effects of price fluctuations will be shown in a separate account as a profit or a loss.

Special attention is given to the treatment of semi-finished products which are made at the company's own works and used at a later date. They ought to be entered in the material accounts at a price composed of material, material burden, direct labor and manufacturing expense, but administrative and selling expenses should not be included. If at the time of issue the manufacturing cost has changed on account of higher or lower material prices, the replacement value ought to be used in charging the final process.

Material Burden

Certain expenses which have a direct relationship to the buying and handling of material ought to be included in manufacturing cost as material burden, or "material oncost." They are buying and storing expenses.

A budget based on the conditions at normal capacity is made to show the percentage of these expenses in relation to the value of the annual issue of material, and this percentage is then applied as "material oncost" to the actual use of materials at standard rates.

The Committee has foreseen the injustice of using a general percentage for all kinds of material, and suggests a segregation of particularly expensive goods as well as especially bulky ones, for which special percentages ought to be calculated.

Direct Labor

This chapter is given a rather brief treatment, as few complications are likely to arise regarding the method of handling direct labor in the cost accounts. It is stated that direct wages should be charged to "Work in Process Account," apparently at actual amounts.

Attention is drawn to certain additions to wages, such as overtime and vacation payments. Generally they ought to be treated as manufacturing expenses and only allocated to specific orders when, for instance, overtime is foreseen to be unavoidable on a particular job. It should be noted that no consideration is given to the American practice of using standard labor rates.

Manufacturing Expenses

The Committee contends that all manufacturing expenses can be classified into two main groups. One consists of such expenses as are directly related to the work done in the factory and may be called labor burden or "labor oncost." Among them are repairs of machinery and equipment, auxiliary material, indirect wages, vacation and overtime payments, power, light, interest and depreciation on machinery, plant rent, salaries to factory office staff, etc. The other group comprises all other expenses, such as interest and insurances on work in process, material wasted, licenses, laboratory expenses, travelling expenses for factory officers, etc. A special term is used for this group which, however, has no common equivalence in American terminology. Here it may be translated as "factory expenses."

According to the Committee's opinion, the manufacturing expenses ought to be charged to different products and production lines as a percentage addition to direct charges. Thus labor burden is to be calculated in proportion to direct wages, and factory burden in proportion to the aggregate of direct material, material burden, direct labor and labor burden.

To justify the principle of distributing manufacturing expenses in proportion to direct wages, a division of the factory into different production centers is deemed to be indispensable. For every

production center a certain labor oncost rate is calculated, and every rate should be divided in two parts, one for variable and one for fixed expenses.

However, the Committee also recognizes other methods for the distribution of overhead. It is admitted that in many industries the most appropriate distribution is by means of labor hour rates or machine hour rates. However, the same result will be achieved through a labor oncost percentage, provided that a proper classification of production centers is made, and the Committee recommends this method as the simplest one for costing purposes. The budgeting of the percentages should be based on the conditions at normal capacity.

Certain Direct Charges

Apart from direct material and direct labor other expenses sometimes ought to be considered as direct charges to specific products. They are, for instance, licenses and patterns for certain orders. It would not be correct to treat them as overhead unless they are of a general nature; otherwise they should be included in the cost of the product for which they are required.

Selling Expenses

It has already been pointed out that the Committee has defined cost to include all expenses for a product until it has been delivered and payment received. So it is natural that a recommendation for the distribution of selling expenses should also be offered.

Introductively, it is mentioned that selling expenses not only consist of the cost of the sales department but also of the cost of delivering and of keeping finished goods in stock. Examples are given of different types of selling expenses, and a division into fixed and variable expenses is recommended.

With regard to the distribution of selling expenses, the Committee gives consideration to the fact that some can be allocated directly to specific orders and some to certain product groups. The main part, however, is of a general character and ought to be charged to all products. This should generally be done by means of a percentage rate, calculated in proportion to the total manufacturing cost at normal capacity. In some cases, when the material element constitutes a dominant part in the cost of

manufacture, the basis should rather be direct labor plus manufacturing expenses.

An example demonstrates the computation of the rates for selling expenses. It is assumed that, from the point of view of sales charges, a company's production can be classified into two groups called A and B respectively:

	Group A	*Group B*
Annual Manufacturing Cost	$500,000	$1,000,000
Direct Selling Expenses for A	$50,000	
Direct Selling Expenses for B		$20,000
General Selling Expenses $150,000 to be distributed in proportion to manufacturing cost	50,000	100,000
Total Selling Expenses	100,000	120,000
Oncost Rate	20%	12%

Administrative Expenses

The same principle is followed for the distribution of administrative expenses as for selling expenses. That is, they are budgeted and put in relation to total manufacturing cost at normal capacity, and the percentage arrived at is used as oncost rate.

Fixed and Variable Expenses

A special chapter is devoted to the classification of overhead into fixed and variable expenses. After an explanation of the meaning of the terms, the Committee gives a thorough treatment of different types of expenses. Among the variable expenses some alter in direct proportion to the volume of business, while others are increased at a lesser and others at a higher rate. Nor are all fixed expenses of the same character. Some are entirely fixed, but others do vary at certain intervals only. As an example of the latter type is mentioned salaries to foremen.

In spite of such differences in the character of various overheads the Committee suggests that, for practical purposes, a distinction between fixed and variable expenses will be sufficient. Theoretically semi-fixed expenses ought to be classified as fixed.

The Committee offers some recommendations as to the use of the distinction between fixed and variable expenses. It is important to know the minimum price at which a company can economically take on orders in times of low capacity, and this is never less than the aggregate of direct charges and variable

expenses. Anything above that price will contribute to the covering of the fixed expenses. However, due consideration must be given to market conditions and other factors. Knowledge of the variable expenses for different production methods is also of considerable importance for planning production when the existing facilities are not fully used. Moreover, when the replacement of machinery is weighed, knowledge of the variable expenses is definitely required.

Time Basis for the Distribution of Overhead

In this chapter the Committee discusses different principles for the computation of burden rates. As previously stated, the total annual expenses of every kind are to be related to either total direct labor or total manufacturing cost, but there still remains to consider the question of what period should be used as a basis for the computation. Four different possibilities are quoted.

The overheads can be related to: (1.) the volume of business of last year; (2.) the volume of business of the current year; (3.) the volume of business budgeted for the current year; or (4.) the volume of business at normal capacity. The Committee favors the use of the fourth principle, and suggests that normal capacity be expressed in terms of machine hours, direct labor or production volume, dependent on the principle used for the distribution of overhead. Generally, normal capacity is considered to be 70 to 90 per cent of maximum capacity, but differences are likely to exist between different industries.

A consequence of the use of burden rates based on conditions at normal capacity is the appearance in the accounts of unabsorbed and overabsorbed burden, the meaning and treatment of which are well known to all American readers.

Different Types of Cost Accounting Systems

In dealing with different types of cost accounting systems the Committee points out introductively that all particular methods explained hitherto regarding the handling of various cost items refer to the so-called oncost method. This is deemed to be the most complex one and the one requiring most attention. However, in certain industries other methods may prove more suitable, and this chapter is devoted to a description of differences in cost accounting procedure.

According to the "division method" all costs incurred during a certain period are charged to Work in Process Account, and unit cost is arrived at by dividing total cost with the number of units produced. This method is particularly convenient for industries where uniform products are made, such as the pulp industry.

For certain industries which make similar but not altogether uniform products the Committee recommends the so-called "equivalence method." A prerequisite for the use of this method is that there exists a certain similarity between the products made, so that, for instance, the same kind of raw material is used, but required in different quantities. By means of studies of the manufacturing processes it can be ascertained how much of the manufacturing costs ought to be charged to the various products in relation to a chosen base product, and "equivalence rates" are set for the computation of unit cost. In its main principles, however, this method is of the same type as the "division method," although more elaborate.

A few lines are devoted to the complications in cost accounting for by-products. The Committee recommends two possibilities for their treatment. One method is to charge all costs to the main product and credit it for the income on by-products, whereas the other method involves separate costing of all the products. In such a case a distribution of the expenses must be made on some reasonable basis, for instance in relation to the sales prices.

In dealing with the "oncost method" the Committee says that this is the most complete one and is required by all industries with a diversified production. The classification of the cost items ought to be the one described previously, but the principles for the distribution of overhead may vary. In this connection the general principles of standard cost accounting are related, and the method is recommended for industries which make standardized products of great variety. Reference is made to Eric Camman's *Basic Standard Costs,* and the Taylor Society's *Scientific Management in American Industry,* Chapter 26.

The Financial Accounts and Cost Accounting

It is held desirable that the cost accounts be tied in with the general accounting system. As a result of the principles favored by the Committee, the costs charged to the various production

lines will, however, differ from what financially is cost. Thus the cost of unused facilities will appear as a cost in the financial accounts but not as a cost of any products made. On the other hand, depreciation on assets entirely written off will be a cost to the production center in question, but not a financial cost.

The Committee favors such an arrangement of the accounting system as to classify profits and losses with respect to the cause of their appearance. Therefore, there ought to be shown separately: (a) profit or loss on account of varying purchase prices; (b) the result of unabsorbed and overabsorbed burden; (c) the result of deviations between manufacturing burden rates and actual expenses; (d) profit or loss on plant and machinery caused by the rent credited having been in excess of or below the aggregate of interest and depreciation; (e) differences between selling and administrative burden rates and actual expenses; and (f) commercial profits and losses.

Example from the Engineering Industry

The last three chapters of the manual are devoted to examples. Two of them deal with the engineering industry, and one with the brick industry. I shall review first one of the examples dealing with a large company in the engineering industry.

The example is confined to Shop B, and shows the distribution of cost items to different production lines, the calculation of burden rates, and so on, in accordance with Exhibit 1, at the end of this article.

The departments of the shop called B 11 to B 23 are different production centers, and B 30 is the test room. To prepare the burden rates a budget is made up for the shop.

The variable departmental labor costs are charged to respective production centers and shown on line 2. They comprise:

01 Maintenance and repair of machinery
02 Maintenance and repair of tools and furniture
03 Tools and other assets directly written-off
04 Extra material
05 Auxiliary material
06 Indirect wages
07 Vacation payments
08 Sundry additions to wages

On line 3 the direct costs of the service departments are distributed to the productive departments; this is done in proportion

to direct wages on line 5. The variable labor burden rates are calculated on line 6.

In the same way the computation of the fixed labor burden rates is shown on line 17, and line 19 shows the total labor burden rates to be used for job cost purposes.

The "factory expenses" are estimated similarly, the variable expenses on lines 21 to 29 and the fixed expenses on lines 32 to 37. Total factory cost is budgeted, at normal capacity, at $4,230,700, and the variable and fixed expenses are put in relation to this amount. Thus the percentages on lines 31, 39 and 46 are arrived at.

An analysis is finally made on lines 47 to 50 of the total manufacturing costs, to show the relationship between direct material, direct labor and manufacturing expenses for the whole shop.

The computation of material oncost and the rates for selling and administrative expenses have been described previously in the Manual and need no further comment.

To illustrate the use of the burden rates computed in the exhibit, the Committee offers the following example of the costing of a certain job.

	Variable Cost	*Fixed Cost*	*Total Cost*
Material: 5.2 kg. roll iron at 30¢	$1.56		$1.56
Direct Labor: B 14	0.90		0.90
B 13	1.10		1.10
Labor Expenses:			
B 14, 200% of $0.90 (93% variable)	0.84	$0.96	1.80
B 13, 275% of 1.10 (122% variable)	1.34	1.69	3.03
			$8.39
Factory Expenses:			
14% of $8.39 (5.35% variable)	0.45	0.72	1.17
			$9.56
Selling and Administrative Expenses:			
15% of $9.56 (3% variable)	0.29	1.14	1.43
	$6.48	$4.51	$10.99
TOTAL COST			10.99
MINIMUM COST	6.48		

Example from the Brick Industry

It is assumed in this example that the works in question manufacture five types of products, viz. ordinary sized bricks, drain

tiles of three different sizes and roofing tile of a standard make. It is assumed, further, that the products require the same manufacturing process. Moreover, they are all made of the same raw material, clay, and on account of these facts the Committee considers a distribution of the manufacturing costs to different production centers superfluous. Instead the "equivalence method" is recommended, which involves the computation of certain rates related to one of the products.

By means of time studies and other cost investigations it has been ascertained that the amounts of direct labor required for the manufacture of 1,000 units of every type of product have the following relationship to bricks:

Bricks	1.0
Drain tiles 2″	1.1
" 3″	1.5
" 5″	2.5
Roofing tiles	3.0

The manufacturing expenses are held to be proportional to direct wages and consequently distributed in the proportion mentioned. Thus 1,000 pieces of 3″ drain tiles will be charged with 1.5 times the amount of manufacturing expenses charged to 1,000 pieces of bricks.

An exception applies in the case of the fuel for the kilns. When studying this cost item it has been found more nearly correct to distribute it in proportion to direct material, or, which is the same, to the weight of the finished products. This is per piece:

Bricks	3.3 kg.
Drain tiles 2″	1.4 "
" 3″	2.3 "
" 5″	5.4 "
Roofing tiles	2.7 "

Exhibit 2 shows the production at normal capacity and the computation of "equivalence amounts."

In Exhibit 3 an illustration is given of the distribution, through the use of the "equivalence amounts," of the various costs of the company. All figures refer to the conditions at normal capacity. It should be noted that all expenses, with the exception of direct material and fuel, are prorated in proportion to the "equivalence amounts" for direct labor. This is done on lines 8, 23, 30 and 38. The distribution of direct material and fuel is shown on line 12.

Since the distribution of the expenses to the five production groups is carried out, the cost per 1,000 units of every type of product is computed, which is also shown in the exhibit.

Comments

Above I have briefly related the contents of the Manual. Naturally, it is impossible in a paper like this to review thoroughly all the ideas put forth in a book of 85 pages, and some of the examples with accompanying exhibits have been omitted. However, I have tried to include in the review all the fundamental principles relative to cost accounting which are held by the Committee, and I will close with some personal observations.

No doubt the Committee deserves much credit for the work done. It is a huge and difficult task to prepare uniform cost accounting principles for the industry as a whole, and much consistency is required. It appears to me that the Committee has followed a logical line in the treatment of all cost items, although it may be questioned whether the line is correct from a cost accounting viewpoint or not. It is gratifying to note that the principle of normal burden rates is observed throughout the book, but it is an open question whether replacement values should generally be given the wide recognition that the Committee holds forth. With regard to fixed assets and their subsequent costs, depreciation and interest, they have only a minor influence upon the fixing of selling prices or the decision whether to take on orders or not, and consequently an elaborate computation of replacement values is of little actual importance in this respect.

Generally it may be questioned whether all industries are in a position to adopt the same cost accounting methods. The Manual has been built up on the conditions prevailing in the engineering industry, which has been the loadstar for the Committee in the treatment of all cost items. To my mind it would have been more desirable to discuss the general principles of cost accounting in a broad way, rather than to advocate a certain accounting method and the technique for it. There are many topics which require a thorough analysis from a theoretical as well as a practical point of view, and in the work towards uniform accounting, questions of principles or even methods, will be better solved if every type of industry is treated separately.

Shop B
DISTRIBUTION OF THE MANUFACTURING EXPENSES

		Direct Production Centers								Indirect						
1 Variable Labor Exp.	Total	B 11	B 12	B 13	B 14	B 15	B 16	B 17	B 18	B 19	B 20	B 21	B 22	B 23	B 30	Joint
2 Exp. Accounts 01-08..	221,500	20,000	50,000	35,000	25,000	2,500	17,000	18,000	12,000	4,000	30,000	6,000	2,000	...	25,000	85,000
3 Share of Ind. Depts...	110,000	5,200	19,700	7,600	7,600	3,900	14,000	25,600	15,500	900	4,400	2,600	1,300	1,700	.....	.....
4 Total Variable Labor Expenses	331,500	25,200	69,700	42,600	32,600	6,400	31,000	43,600	27,500	4,900	34,400	8,600	3,300	1,700	.....	.....
5 Direct Wages	504,000	24,000	90,000	35,000	35,000	18,000	64,000	117,000	71,000	4,000	20,000	12,000	6,000	8,000	.....	.....
6 Variable Labor Burden Rate .....%	66	105	77	122	93	36	48	37	39	123	172	72	55	21	.....	.....
7 Fixed Labor Expenses:																
8 Direct Salaries	65,100	5,700	9,700	5,500	4,000	1,700	5,700	13,500	13,200	600	3,200	2,300	...	...	24,000	.....
9 Indirect Salaries	66,000	3,100	11,800	4,600	4,600	2,400	8,400	15,300	9,300	500	2,600	1,600	800	1,000	.....	.....
10 Plant Rent	99,100	8,900	17,400	8,300	6,000	4,600	10,700	22,900	11,400	500	5,900	900	600	1,000	12,400	7,100
11 Machinery Rent	131,000	38,200	41,200	8,000	3,000	....	4,200	4,800	2,000	...	24,000	2,600	3,000	...	.....	.....
12 Heat	16,400	1,500	2,800	1,400	1,000	800	1,800	3,700	1,800	100	1,000	200	100	200	2,000	.....
13 Power and Light	74,400	4,900	36,100	11,800	2,000	200	1,700	2,200	8,600	...	4,300	700	1,900	...	12,700	19,000
14 Share of Factory Management	106,000	5,000	18,900	7,400	7,400	3,800	13,500	24,600	14,900	800	4,200	2,500	1,300	1,700	.....	.....
15 Share of Ind. Depts...	77,200	3,700	13,800	5,400	5,400	2,800	9,800	17,800	10,900	600	3,100	1,800	900	1,200	.....	.....
16 Total Fixed Labor Expenses	635,200	71,000	151,700	52,400	33,400	16,300	55,800	104,800	72,100	3,100	48,300	12,600	8,600	5,100	.....	.....
17 Labor Burden Rate..%	126	296	169	150	95	91	87	90	102	78	242	105	143	64	.....	.....
18 Total Fixed Labor Burden Rate.....%	192	401	246	272	188	127	135	127	141	201	414	177	198	85	.....	.....
19 Total Labor Burden Rate, rounded off.%	...	400	250	275	200	125	125	125	150	200	425	175	200	85	.....	.....

20 Variable Factory Expenses	
21 Patterns	10,000
22 Experiments	1,000
23 Guarantees	40,000
24 Safety Insurances.....	2,000
25 Fire "	16,000
26 Fees	10,000
27 Interest on Work in Process	140,000
28 Share of Transport Dept.	6,000
29 Total Variable Factory Expenses	225,000
30 "Shop Cost".....4,230,700	
31 Variable "Factory Burden Rate"	5.35

Fixed Factory Expenses	
32 Certain Expense Accounts.	55,000
33 Repair of Buildings.....	.....
34 Share of Laboratory Exp..	13,000
35 Share of Drawing Office Exp.	280,000
36 Share of Store-Room Exp.	12,000
37 Total Fixed Factory Expenses	360,000
38 "Shop Cost"	4,230,700
39 Fixed "Factory Burden Rate"	8.55

Shop Cost Computation	
40 Material 2,677,200	
41 Material Expenses.....	82,800
42 Direct Labor	504,000
43 Variable Labor Exp...	331,500
44 Fixed Labor Exp.....	635,200
45 Total ("Shop Cost")..4,230,700	

Analysis of Manufacturing Cost	per annum	per month	%
47 Material	2,677,200	223,100	55.4
48 Labor	504,000	42,000	10.4
49 Expenses	1,654,800	137,900	34.2
50	4,836,000	403,000	100.0

46 Total "Factory Burden Rate" 5.35 + 8.55 = 13.90 14%

EXHIBIT 1

BASIS FOR THE DISTRIBUTION OF MANUFACTURING COSTS AT THE TILE FACTORY

	DIRECT AND INDIRECT MATERIAL, FUEL			ALL OTHER COSTS	
	Production (1,000 pieces)	*Equivalence Rate*	*Equivalence Amount*	*Equivalence Rate*	*Equivalence Amount*
Bricks	1,370	3.3	3.3 × 1,370 = 4,521	1.0	1.0 × 1,370 = 1,370
Drain tiles 2″	302	1.4	1.4 × 302 = 423	1.1	1.1 × 302 = 332
Drain tiles 3″	108	2.3	2.3 × 108 = 248	1.5	1.5 × 108 = 162
Drain tiles 5″	13	5.4	5.4 × 13 = 70	2.5	2.5 × 13 = 33
Roofing tiles	760	2.7	2.7 × 760 = 2,052	3.0	3.0 × 760 = 2,280
			Total 7,314		Total 4,177

EXHIBIT 2

EXAMPLE OF COST DISTRIBUTION AT A TILERY THROUGH THE "EQUIVALENCE METHOD"

		Bricks			Drain-tiles 2"			Drain-tiles 3"			Drain-tiles 5"			Roofing tiles		
		Equiv. Amount	Dollars	Cost per 1,000 p.	Equiv. Amount	Dollars	Cost per 1,000 p.	Equiv. Amount	Dollars	Cost per 1,000 p.	Equiv. Amount	Dollars	Cost per 1,000 p.	Equiv. Amount	Dollars	Cost per 1,000 p.
	Manufacturing Costs															
1	I. Variable															
2	Wages	72,662														
3	Auxiliary material.	1,014														
4	Power and light...	2,129														
5	Maintenance & repair, machinery & tools	7,597														
6	Maintenance & repair, kilns	2,264														
7	Estimated interest on current assets for manuf. purposes	1,050														
8		86,716	1370	28,441	20.80	332	6,892	22.85	162	3,349	31.01	33	681	52.40	2280	47,253	62.30
9	Clay	840														
10	Extra material....	3,517														
11	Fuel	26,886														
12		31,243	4521	19,315	14.11	423	1,810	6.02	248	1,059	9.82	70	299	23.01	2052	8,760	11.54
13	Total variable manuf. costs.....	117,959														
14	2. Fixed															
15	Salaries to foremen and staff.....	4,160														
16	Power and light..	6,000														
17	Maintenance & repair, buildings....	4,121														
18	Insurances	3,227														
19	Property tax.....	1,713														
20	Depreciation, buildings	12,750														
21	Depreciation, machinery and tools.	11,115														
22	Estimated interest on fixed assets for manuf. purposes..	11,600														
23	Total fixed manuf. costs	54,086	1370	17,800	13.01	332	4,280	14.22	162	2,090	19.42	33	426	22.80	2230	29,500	28.80
24	Total manuf. cost	172,055		65,556	47.92		12,982	43 09		6,498	60.25		1,406	108.21		85,613	112.64

		Bricks			Drain-tiles 2"			Drain-tiles 3"			Drain-tiles 5"			Roofing tiles		
		Equiv. Amount	Dollars	Cost per 1,000 p.	Equiv. Amount	Dollars	Cost per 1,000 p.	Equiv. Amount	Dollars	Cost per 1,000 p.	Equiv. Amount	Dollars	Cost per 1,000 p.	Equiv. Amount	Dollars	Cost per 1,000 p
	Brought Forward															
24	Total manuf. cost	172,055	65,556	47.92		12,982	43.09		6,498	60.25		1,406	108.21		85,613	112.64
25	Administrative and selling expenses															
26	1. Variable															
27	Commissions	1,534														
28	Stores and delivery wages	3,020														
29	Estimated interest on current assets for sales purposes	4,300														
30	Total variable adm. and selling expenses	8,854	2,903	2.12	332	700	2.33	162	342	3.17	33	69	5.32	2280	4,840	6.38
31	2. Fixed															
32	Salaries	8,425														
33	Office equipment...	315														
34	Telephone, telegrams, postage....	927														
35	Representation & travelling expenses	2,317														
36	Advertising	1,343														
37	Sundry expenses...	1,585														
38	Total Fixed Adm. and Selling Expenses	15,922	1370	5,227	3.82	332	1,260	4.16	162	616	5.71	33	126	9.71	2280	8,693	11.44
39	Total Adm. and Selling Expenses..	24,776		8,130	5.94		1,960	6.51		958	8.88		195	15.03		13,533	17.82
40	Total Cost.....	196,831		73,686	53.86		14,942	49.60		7,456	69.13		1,601	123.24		99,146	130 46

EXHIBIT 3

20th INTERNATIONAL COST CONFERENCE

Atlantic City Auditorium
and Ambassador Hotel

ATLANTIC CITY, N. J.

JUNE 26, 27, 28, 29, 1939

Preliminary Announcement
Technical Program

— GENERAL THEME —

"COST ACCOUNTING AND INDUSTRIAL PRICING"

with sessions on

Influence of Costs in Pricing
Cost Accountant's Role in Pricing
Direct Costs and Overhead in Pricing
Capital Investment in Pricing

— ADDITIONAL FEATURES —

A group of round-table discussion on subjects of current interest, planned for Wednesday morning.

Another panel discussion, organized along the lines of the session that proved so popular in Chicago, planned for Thursday afternoon.